

What is claimed is:

1. A method for providing perspective corrected images from at least one distorted image, the method comprising steps of:

receiving said distorted image;

storing a portion of said distorted image;

transforming a set of control vectors to a set of control points that defines an area that associates said portion of said distorted image with a portion of a perspective corrected image;

transforming said portion of said distorted image associated with said area to said portion of said perspective corrected image using a global bivariate polynomial transformation;

displaying said portion of said perspective corrected image;

sensing inputted information; and

controlling the transformation and display of said perspective corrected image through said inputted information.

2. The method of claim 1 wherein the step of transforming said portion of said distorted image is accomplished using:

$$u = \sum_{i=0}^N \sum_{j=0}^{N-i} a_{ij} x^i y^j$$

$$v = \sum_{i=0}^N \sum_{j=0}^{N-i} b_{ij} x^i y^j$$

as said global bivariate polynomial transformation.

3. The method of claim 2 wherein N is 2 or 3.
4. The method of claim 1 wherein said set of control points contains a number of control points, said number having a lower limit of five and an upper limit of one-half of the number of pixels in said portion of said perspective corrected image.
5. The method of claim 1 wherein said distorted image is received from a computer storage device.
6. The method of claim 1 wherein said distorted image is received from a network.
7. The method of claim 6 wherein said network is a computer network.
8. The method of claim 6 wherein said network is in communication with the Internet.
9. The method of claim 1 wherein said distorted image is a result of imaging an environment through at least one wide-angle lens.
10. The method of claim 1 wherein said distorted image is a result of imaging an environment through at least one fisheye lens.
11. The method of claim 1 wherein said distorted image includes an image of at least one sixth of an environment.
12. An apparatus for providing perspective corrected images from at least one distorted image, the apparatus comprising:  
  
an input configured to receive said distorted image;

a memory, coupled to the input, configured to store a portion of said distorted image;

a processor, coupled to the memory, configured to transform a set of control vectors to a set of control points that defines an area that associates said portion of said distorted image with a portion of a perspective corrected image, the processor further configured to transform said portion of said distorted image associated with said area to said portion of said perspective corrected image using a global bivariate polynomial transformation;

a presentation mechanism, coupled to the memory, configured to present said portion of said perspective corrected image; and

a selection mechanism, coupled to the processor, configured to specify said set of control vectors.

13. The apparatus of claim 12 wherein the transformation of said portion of said distorted image is accomplished using:

$$u = \sum_{i=0}^N \sum_{j=0}^{N-i} a_{ij} x^i y^j$$

$$v = \sum_{i=0}^N \sum_{j=0}^{N-i} b_{ij} x^i y^j$$

as said global bivariate polynomial transformation.

14. The method of claim 13 wherein N is 2 or 3.
15. The apparatus of claim 12 wherein said set of control points contains a number of control points, said number having a lower limit of five and an upper limit of one-half of the number of pixels in said portion of said perspective corrected image.

16. The apparatus of claim 12 wherein said distorted image is received from a computer storage device.
17. The apparatus of claim 12 wherein said distorted image is received from a network.
18. The apparatus of claim 17 wherein said network is a computer network.
19. The apparatus of claim 17 wherein said network is in communication with the Internet.
20. The apparatus of claim 12 wherein said distorted image is a result of imaging an environment through at least one wide-angle lens.
21. The apparatus of claim 12 wherein said distorted image is a result of imaging an environment through at least one fisheye lens.
22. The apparatus of claim 12 wherein said plurality of distorted images includes an image of at least one sixth of an environment.
23. A computer program product including:

a computer usable data carrier having computer readable code embodied therein for causing a computer to provide perspective corrected images from at least one distorted image, said computer readable code including:

computer readable program code configured to cause said computer to effect an input mechanism configured to receive said distorted image;

computer readable program code configured to cause said computer to effect a storage mechanism configured to store a portion of said distorted image received by the input mechanism;

computer readable program code configured to cause said computer to effect a transformation mechanism configured to transform a set of control vectors to a set of control points that defines an area that associates said portion of said distorted image with a portion of a perspective corrected image, the processor further configured to transform said portion of said distorted image associated with said area to said portion of said perspective corrected image using a global bivariate polynomial transformation;

computer readable program code configured to cause said computer to effect a presentation mechanism, configured to present said portion of said perspective corrected image generated by the transformation mechanism; and

computer readable program code configured to cause said computer to effect a selection mechanism configured to specify said set of control vectors.

24. The computer program product of claim 23 wherein the computer usable data carrier is a computer readable media.
25. The computer program product of claim 23 wherein the computer usable data carrier is a carrier wave.
26. The apparatus of claim 23 wherein the transformation of said portion of said distorted image is accomplished using:

$$u = \sum_{i=0}^N \sum_{j=0}^{N-i} a_{ij} x^i y^j$$

$$v = \sum_{i=0}^N \sum_{j=0}^{N-i} b_{ij} x^i y^j$$

as said global bivariate polynomial transformation.

27. The method of claim 26 wherein N is 2 or 3.
28. The computer program product of claim 23 wherein said set of control points contains a number of control points, said number having a lower limit of five and an upper limit of one-half of the number of pixels in said portion of said perspective corrected image.
29. The computer program product of claim 23 wherein said distorted image is received from a computer storage device.
30. The computer program product of claim 23 wherein said distorted image is received from a network.
31. The computer program product of claim 30 wherein said network is a computer network.
32. The computer program product of claim 30 wherein said network is in communication with the Internet.
33. The computer program product of claim 23 wherein said one of said plurality of distorted images is a result of imaging an environment through at least one wide-angle lens.
34. The computer program product of claim 23 wherein said one of said plurality of distorted images is a result of imaging an environment through at least one fisheye lens.
35. The computer program product of claim 23 wherein said one of said plurality of distorted images includes an image of at least one sixth of an environment.